

WHAT IS CLAIMED IS:

1. An electrophotographic photosensitive member comprising a support at least the surface of which is conductive, and a photoconductive layer formed
5 thereon containing an amorphous material composed chiefly of silicon, wherein;

10 said photoconductive layer has two or more layer regions, and protuberances in a layer region (A) adjoining to a layer region (B) that is closest to a free surface of the electrophotographic
photosensitive member have been stopped from growing at the surface of the layer region (A).

15 2. An electrophotographic photosensitive member according to claim 1, wherein, at the surface of a layer region of said photoconductive layer, protuberances of 15 μm or more each in major axis are in a number of 5 or less per 100 cm^2 .

20 3. An electrophotographic photosensitive member according to claim 1, wherein said photoconductive layer has a layer thickness of from 10 μm to 60 μm .

25 4. An electrophotographic photosensitive member according to claim 1, wherein said layer regions each have a layer thickness of from 3 μm to 15 μm .

5. An electrophotographic photosensitive member according to claim 1, wherein said layer regions are present in a number of from 2 to 6 in the layer thickness direction.

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6. An electrophotographic photosensitive member according to claim 1, wherein at least a charge injection blocking layer and the photoconductive layer are superposingly formed in this order on said 10 support.

7. An electrophotographic photosensitive member according to claim 1, wherein a surface protective layer is provided.

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8. An electrophotographic photosensitive member according to claim 1, wherein a charge injection blocking layer and a surface protective layer are superposingly formed on said photoconductive layer.

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9. A process for producing an electrophotographic photosensitive member having a support at least the surface of which is conductive, and a photoconductive layer formed thereon containing 25 an amorphous material composed chiefly of silicon, which comprises forming the surface of the layer region (A) in the photoconductive layer, carrying out

an operation for stopping protuberances from growing at the surface of the layer region (A), and forming a layer region (B) on the layer region (A), wherein;

5 said photoconductive layer has two or more layer regions, and protuberances in the layer region (A) adjoining to the layer region (B) that is closest to a free surface of the electrophotographic photosensitive member have been stopped from growing at the surface of the layer region (A).

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10. A process for producing an electrophotographic photosensitive member according to claim 9, wherein said operation is carried out by taking out of a reaction chamber the support on which 15 a layer region of said photoconductive layer has been formed.

11. A process for producing an electrophotographic photosensitive member according 20 to claim 10, wherein said support is taken out of the reaction chamber into a vacuum atmosphere.

12. A process for producing an electrophotographic photosensitive member according 25 to claim 9, wherein said operation is carried out while the thickness of each photoconductive layer region comes to be 3 μm or more to 15 μm or less from

the support side.

13. A process for producing an
electrophotographic photosensitive member according
5 to claim 9, wherein the photoconductive layer is
formed using a support-loading vacuum chamber, a
support-heating vacuum chamber, a reaction vacuum
chamber, a support-cooling and -delivery vacuum
chamber and a transporting vacuum chamber; the
10 transporting vacuum chamber is moved between the
support-loading vacuum chamber and each of the said
other vacuum chambers, and connected with the
support-loading vacuum chamber and each of the said
vacuum chambers via their open-close gates, so that
15 the support can be taken in and out of, and moved
between, the transporting vacuum chamber and the
support-loading vacuum chamber and the said other
vacuum chambers, where;

a photoconductive layer region containing an
20 amorphous material composed chiefly of silicon is
formed on the support set in the reaction vacuum
chamber, and thereafter the support on which the
photoconductive layer region has been deposited is
transported to, and set in, a different reaction
25 chamber by means of the transporting vacuum chamber
to repeat deposition of a photoconductive layer
region containing an amorphous material composed

chiefly of silicon.

14. A process for producing an
electrophotographic photosensitive member according
5 to claim 13, wherein said transporting vacuum chamber
comprises a transporting vacuum chamber which
transports the support from the support-loading
chamber to the reaction chamber, a transporting
vacuum chamber which transports the support with a
10 photoconductive layer region from the reaction
chamber to the same or different reaction chamber,
and a transporting vacuum chamber which transports
the support with photoconductive layer regions from
the reaction chamber to the support-delivery chamber.

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15. A process for producing an
electrophotographic photosensitive member according
to claim 13, wherein the support on which a
photoconductive layer region has been deposited is
20 transported to a reaction chamber whose inner
surfaces have been cleaned, and another
photoconductive layer region is superposingly formed
thereon.

25 16. A process for producing an
electrophotographic photosensitive member according
to claim 13, wherein said photoconductive layer

region deposited in one reaction chamber is in a layer thickness of from 3 μm to 15 μm .

17. A process for producing an
5 electrophotographic photosensitive member according to claim 9, wherein the deposition of said photoconductive layer region is repeated a plurality of times to form the photoconductive layer.

10 18. A process for producing an electrophotographic photosensitive member according to claim 9, wherein a photoconductive layer region is superposingly formed after the surface of a photoconductive layer region deposited previously has
15 been treated with hydrogen plasma.

19. A process for producing an electrophotographic photosensitive member according to claim 9, wherein a photoconductive layer region is
20 superposingly formed after a photoconductive layer region deposited previously has been subjected to heat treatment at a support temperature higher than that for the photoconductive layer region deposited previously.

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20. A process for producing an electrophotographic photosensitive member according

to claim 19, wherein said heat treatment is carried out in the transporting vacuum chamber.

21. A process for producing an
5 electrophotographic photosensitive member according to claim 19, wherein said heat treatment is carried out in a different reaction chamber after the support on which the photoconductive layer region has been deposited has been transported.